



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/796,586	03/09/2004	Christina Prowell	4962	1112

48226 7590 08/23/2007
BASF CATALYSTS LLC
100 CAMPUS DRIVE
FLORHAM PARK, NJ 07932

EXAMINER

SHOSHO, CALLIE E

ART UNIT	PAPER NUMBER
----------	--------------

1714

MAIL DATE	DELIVERY MODE
-----------	---------------

08/23/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/796,586

Applicant(s)

PROWELL ET AL.

Examiner

Callie E. Shosho

Art Unit

1714

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 May 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2 and 4-26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2 and 4-26 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

1. It is noted that the examiner of record has changed. The new examiner is Callie Shosho.
2. All outstanding rejections except for those described below are overcome by applicants' amendment filed 5/30/07.

The new grounds of rejection set forth below are necessitated by applicants' amendment and thus, the following action is final.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claim 2 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter, which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claim 2 has been amended to recite "kaolin filler has been pretreated so as to contain 1.24 to 12 wt.% of said organosilane or organosiloxane". It is the examiner's position that this phrase fails to satisfy the written description requirement under the cited statute since there does not appear to be a written description requirement of the recited lower limit of the amount of organosilane or organosiloxane in the application as originally filed, *In re Wright*, 866 F.2d 422, 9 USPQ2d 1649 (Fed. Cir. 1989) and MPEP 2163.

As support for the above amendment, applicants point to page 11, lines 7-10 and examples 2 and 4 of the present specification.

However, while these portions of the present specification provide support to recite that the amount of aminopropyltriethoxysilane is 1.24%, this does not provide support to recite that the lower limit of the amount of organosilane or organosiloxane is 1.24%. That is, while there is support in the specification as originally filed to recite that the amount of a specific organosilane, namely, aminopropyltriethoxysilane is 1.24%, there is no support to recite broadly recite that the amount of organosilane or organosiloxane is 1.24% given that the broad disclosure or organosilane or organosiloxane encompasses compounds other than aminopropyltriethoxysilane for which there is no support in the present specification to recite are present in amount of 1.24%.

Similarly, while claim 20 provides support to recite about 1.24% aminoalkylsilane, there is no support to recite broadly recite that the amount of organosilane or organosiloxane is 1.24% given that the broad disclosure of organosilane or organosiloxane encompasses compounds other than aminopropyltriethoxysilane for which there is no support in the present specification to recite are present in amount of 1.24%.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1-2, 4-11, 16, and 18-26 are rejected under 35 U.S.C. 102(b) as being anticipated by Joseph et al. (U.S. 6,136,994).

Joseph et al. disclose composition comprising silicone resin including polydimethylsiloxane and calcined kaolin pretreated with organosilane of the formula $R^1_aSiX_{4-a}$ or organosiloxane of the formula $R^2_nSiO_{(4-n)/2}$, i.e. corresponding to presently claimed amino-functionalized or vinyl-functionalized organosilane or organosiloxane, wherein the kaolin possesses average particle size of 10 μm or less, preferably 2 μm or less. The ratio of silicone resin to treated kaolin is 0.25/1 – 2/1. There is disclosed aqueous dispersion of pretreated kaolin comprising 5-90% kaolin and 25-75%, based on the amount of kaolin, organosilane or organosiloxane. Thus, it is calculated that the kaolin comprises 1.25% ($0.25*5$) – 67.5% ($0.75*90$) organosilane or organosiloxane. There is also disclosed method of adding the treated kaolin to the silicone resin. Joseph et al. do not require the use of silica (col.1, lines 8-16, col.1, line 49-col.2, line 3, col.2, lines 11-12, 15-17, 28-29, and 36-40, col.2, line 47-col.3, line 15, col.3, lines 45-47, and col.4, lines 16-19, 32, and 45-53). Given that Joseph et al. disclose method of adding treated kaolin as presently claimed to silicone resin as presently claimed, it is clear that such method would inherently improve heat stability and physical properties of the silicone resin.

in light of the above, it is clear that Joseph et al. anticipate the present claims.

Claim Rejections - 35 USC § 103

7. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

8. Claims 1-2, 4-15, 18, and 22-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cornelius et al. (U.S. 4,677,141).

Cornelius et al. disclose silane elastomer composition comprising 100 parts silicone elastomer, 1-50 parts pretreated calcined kaolin clay, and pigment. There is also disclosed method of improving the heat stability of the silicone elastomer with the pretreated kaolin. The kaolin is pretreated with silane such as vinyl-tris (β -methoxyethoxy)silane. Further, the silicone elastomer is formed by vulcanizing. Attention is drawn to example 1 that discloses kaolin pretreated with approximately 1% vinyl-tris (β -methoxyethoxy)silane wherein the kaolin has average particle size of about 0.81 μm (abstract, col.1, lines 59-66, col.2, lines 12-31 and 43-46, col.4, lines 25-32 and 41-51, and col.5, lines 37-39).

The difference between Cornelius et al. and the present claimed invention is the requirement in the claims of (a) amount of vinyl-functionalized organosilane or organosiloxane and (b) forming silicone elastomer by vulcanizing.

With respect to difference (a), it is noted that Cornelius et al. disclose the use of approximately 1% vinyl-functionalized organosilane while the present claims require greater than 1.2% or at least 1.2% vinyl-functionalized organosilane.

It is apparent, however, that the instantly claimed amount of vinyl-functionalized organosilane and that taught by Cornelius et al. are so close to each other that the fact pattern is similar to the one in *In re Woodruff*, 919 F.2d 1575, USPQ2d 1934 (Fed. Cir. 1990) or *Titanium Metals Corp. of America v. Banner*, 778 F.2d 775, 227 USPQ 773 (Fed.Cir. 1985) where despite a “slight” difference in the ranges the court held that such a difference did not “render the claims patentable” or, alternatively, that “a prima facie case of obviousness exists where the claimed ranges and prior art ranges do not overlap but are close enough so that one skilled in the art would have expected them to have the same properties”.

In light of the case law cited above and given that there is only a “slight” difference between the amount of vinyl-functionalized organosilane disclosed by Cornelius et al. and the amount disclosed in the present claims, it therefore would have been obvious to one of ordinary skill in the art that the amount of vinyl-functionalized organosilane disclosed in the present claims is but an obvious variant of the amounts disclosed in Cornelius et al., and thereby one of ordinary skill in the art would have arrived at the claimed invention.

With respect to difference (b), it is noted that although Cornelius et al. do not disclose forming the silicone elastomer at ambient or elevated temperatures, it is noted that “[E]ven though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process”, *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985). Further, “although produced by a different process, the burden shifts to applicant to come

forward with evidence establishing an unobvious difference between the claimed product and the prior art product", *In re Marosi*, 710 F.2d 798, 802, 218 USPQ 289, 292 (Fed. Cir.1983). See MPEP 2113.

Therefore, absent evidence of criticality regarding the presently claimed process for forming the silicone elastomer and given that Cornelius et al. meets the requirements of the claimed silicone elastomer, Cornelius et al. clearly meet the requirements of present claims 13-14.

9. Claims 1-2, 5-12, 15-23, and 25-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tsou et al. (U.S. 2004/0147639).

Tsou et al. disclose composition comprising 35-65% kaolin pretreated with 0.1-5% aminosilane of the formula $(H_2-N-R)_{4-n}Si(OR^1)_n$ where R is C₁-C₄ alkylene, R¹ is C₁-C₄ alkyl, and n is 1-3, 35-65% silicone rubber, and pigment. It is disclosed that the kaolin possesses average particle size of 0.008-5 μm . It is further calculated that the ratio of kaolin to silicone rubber is 0.54 ((35/65) to 1.8 (65/35). There is also disclosed method comprising mixing silicone rubber with the pretreated kaolin (paragraphs 8, 18, 19, 20-22, 33, 43 (line 16), and 56). Given that Tsou et al. disclose method of adding treated kaolin as presently claimed to silicone resin as presently claimed, it is clear that such method would inherently improve heat stability and physical properties of the polydimethylsiloxane.

It is noted that Tsou et al. disclose kaolin having been pretreated with 0.1-5 wt.% aminosilane while the present claims require kaolin having been pretreated with greater than 1.2

wt.% up to 12 wt.% amino-functionalized organosilane, about 1.24 wt.%, or at least 1.2 wt.% up to 12 wt.% amino-functionalized organosilane.

However, as set forth in MPEP 2144.05, in the case where the claimed range "overlap or lie inside ranges disclosed by the prior art", a *prima facie* case of obviousness exists, *In re Wertheim*, 541 F.2d 257, 191 USPQ 90 (CCPA 1976); *In re Woodruff*, 919 F.2d 1575, 16 USPQ2d 1934 (Fed. Cir. 1990).

In light of the above, it therefore would have been obvious to one of ordinary skill in the art to pretreat kaolin in Tsou et al. with amount of aminosilane, including that presently claimed, and thereby arrive at the claimed invention.

10. Claims 1-2, 4-11, 16, and 18-26 are rejected under 35 U.S.C. 102(b) are rejected under 35 U.S.C. 103(a) as being unpatentable over Joseph et al. (U.S. 6,136,994).

Joseph et al. disclose composition comprising silicone resin including polydimethylsiloxane and calcined kaolin pretreated with organosilane of the formula $R^1_aSiX_{4-a}$ or organosiloxane of the formula $R^2_nSiO_{(4-n)/2}$, i.e. corresponding to presently claimed amino-functionalized or vinyl-functionalized organosilane or organosiloxane, wherein the kaolin possesses average particle size of 10 μm or less, preferably 2 μm or less. The ratio of silicone resin to treated kaolin is 0.25/1 – 2/1. There is disclosed aqueous dispersion of pretreated kaolin comprising 5-90% kaolin and 25-75%, based on the amount of kaolin, organosilane or organosiloxane. Thus, it is calculated that the kaolin comprises 1.25% ($0.25*5$) – 67.5% ($0.75*90$) organosilane or organosiloxane. There is also disclosed method of adding the treated kaolin to the silicone resin. Joseph et al. do not require the use of silica (col.1, lines 8-16, col.1,

line 49-col.2, line 3, col.2, lines 11-12, 15-17, 28-29, and 36-40, col.2, line 47-col.3, line 15, col.3, lines 45-47, and col.4, lines 16-19, 32, and 45-53). Given that Joseph et al. disclose method of adding treated kaolin as presently claimed to silicone resin as presently claimed, it is clear that such method would intrinsically improve heat stability and physical properties of the polydimethylsiloxane as presently claimed.

It is noted that Joseph et al. disclose kaolin having been pretreated with 1.25 –67.5 wt.% organosilane or organosiloxane while the present claims require kaolin having been pretreated with greater than 1.2 wt.% up to 12 wt.% organosilane or organosiloxane, about 1.24 wt.% organosilane or organosiloxane, or at least 1.2wt.% up to 12 wt.% organosilane or organosiloxane.

However, as set forth in MPEP 2144.05, in the case where the claimed range “overlap or lie inside ranges disclosed by the prior art”, a *prima facie* case of obviousness exists, *In re Wertheim*, 541 F.2d 257, 191 USPQ 90 (CCPA 1976); *In re Woodruff*, 919 F.2d 1575, 16 USPQ2d 1934 (Fed. Cir. 1990).

In light of the above, it therefore would have been obvious to one of ordinary skill in the art to pretreat kaolin in Joseph et al. with amount of organosilane or organosiloxane, including that presently claimed, and thereby arrive at the claimed invention.

Response to Arguments

11. Applicants' arguments filed 5/30/07 have been fully considered but they are not persuasive.

Specifically, applicants argue that Cornelius et al. is not a relevant reference against the present claims given that there is no disclosure in Cornelius et al. that the kaolin has been pretreated so as to contain greater than 1.2 wt.% up to 12 wt.% of vinyl-functionalized organosilane (claim 1) or at least 1.2 wt.% up to 12 wt.% vinyl-functionalized organosilane or organosiloxane (claim 22). Rather, Cornelius et al. disclose the use of approximately 1% vinyl-functionalized organosilane.

However, it is apparent that the instantly claimed amount of vinyl-functionalized organosilane and that taught by Cornelius et al. are so close to each other that the fact pattern is similar to the one in *In re Woodruff*, 919 F.2d 1575, USPQ2d 1934 (Fed. Cir. 1990) or *Titanium Metals Corp. of America v. Banner*, 778 F.2d 775, 227 USPQ 773 (Fed.Cir. 1985) where despite a “slight” difference in the ranges the court held that such a difference did not “render the claims patentable” or, alternatively, that “a prima facie case of obviousness exists where the claimed ranges and prior art ranges do not overlap but are close enough so that one skilled in the art would have expected them to have the same properties”.

In light of the case law cited above and given that there is only a “slight” difference between the amount of vinyl-functionalized organosilane disclosed by Cornelius et al. and the amount disclosed in the present claims, it therefore would have been obvious to one of ordinary skill in the art that the amount of vinyl-functionalized organosilane disclosed in the present claims is but an obvious variant of the amounts disclosed in Cornelius et al., and thereby one of ordinary skill in the art would have arrived at the claimed invention.

Applicants point to example 4 of the present specification that compares three different surface treatments, namely, 0.8 wt.%, 1 wt.%, and 1.24 wt.% respectively. Applicants argue that

it is clear that with only a slight percentage increase in surface treatment, the silicone elastomer has superior hardness, tensile strength, elongation at break, modulus at 100%, and tear strength.

However, it is the examiner's position that the data is not commensurate in scope with the scope of the present claims or with the scope of the "closest" prior art Cornelius et al.

Specifically, the data is not commensurate in scope with the scope of present claim 22 given that this claim requires kaolin pretreated so as to contain at least 1.2wt.% up to 12 wt.% amino-functionalized organosilane or organosiloxane or vinyl-functionalized organosilane or organosiloxane while the data in the specification utilizes amount of 1.24 wt.% aminopropyltriethoxysilane. Given that applicants themselves argue that only a slight percentage increase in surface treatment produces unexpected results, the data is not persuasive given that there is no data at 1.2 wt.% but only for 1.24 wt.%, which is greater than the claimed amount of 1.2 wt.%. Thus, the data is not commensurate in scope with the scope of present claim 22.

Further, the data is not commensurate in scope with the scope of the Cornelius et al. given that Cornelius et al. disclose the use of pretreated kaolin that is closer to the present invention than that of the comparative data. That is, Cornelius et al. disclose the use of kaolin having been pretreated with approximately 1 wt.% vinyl-functionalized organosilane which, in light of the phrase "approximately", includes amounts slightly above 1%. However, the comparative data only utilizes amount of 1 wt.% There is no comparison between presently claimed composition and composition comprising kaolin having been pretreated to as to contain vinyl-functionalized organosilane in amount of approximately" 1 wt.%, i.e. data at amounts slightly higher than 1 wt.%. This is significant given applicants' own admission that only a slight percentage increase in surface treatment produces unexpected results.

Further, the data is not commensurate in scope with the scope of the present claims or with the scope of Cornelius et al. given that there is no data for kaolin pretreated with vinyl-functionalized organosilane or organosiloxane. This is significant given that Cornelius et al. discloses kaolin pretreated with approximately 1 wt.% vinyl-tris (β -methoxyethoxy)silane. There is no disclosure in Cornelius et al. of amino-functionalized organosilane or organosiloxane. Thus, the comparative data is not only outside the scope of the present claims but also outside the scope of Cornelius et al. which discloses kaolin pretreated with vinyl-functionalized organosilicone or organosiloxane.

12. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

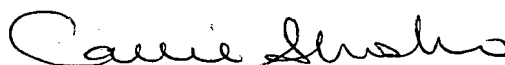
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Art Unit: 1714

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Callie E. Shosho whose telephone number is 571-272-1123. The examiner can normally be reached on Monday-Friday (6:30-4:00) Alternate Fridays Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on 571-272-1119. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Callie E. Shosho
Primary Examiner
Art Unit 1714

CS
8/19/07